

Recovery Plan Action Status

Plan Name: Lee County Cave Isopod (*Lirceus usdagalun*) Recovery Plan

Plan Status: Final

Plan Date: 30-Sep-97

Lead Agency: USFWS

Lead Office: Southwestern Virginia Ecological Services Field Office

(623-1233)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	1.1	Survey the Thompson Cedar cave system at least annually at locations where this species was previously recorded.	Ongoing Current	FY 1995 - FY 1999		The Nature Conservancy, Contract , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	Funding continued as needed
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	1.2	Inventory potential sampling sites in the Thompson Cedar cave system and in the other systems where this species is currently known to occur.	Partially Complete	FY 1995 - FY 1999		Contract , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	Initial comprehensive survey followed by task 2.1
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	1.3	Search for additional cave systems containing the Lee County cave isopod.	Ongoing Current	FY 1995 - FY 1999		Contract , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	Evaluate after 3 years to determine if task is completed; may require additional time and funds
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	2.1	Select appropriate sites for population monitoring within each cave system and determine the appropriate monitoring technique and strategy for each system.	Ongoing Current	FY 1995 - FY 1999		Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	2.2	Implement monitoring of Lee County cave isopod populations on a regular basis (at least once annually) for ten years.	Ongoing Current	FY 1995 - FY 1999		Contract , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	+5K annually through FY10

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Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	3.1	Conduct research on sex ratios, fecundity, survival rate, mortality rate, longevity, food supply, habitat requirements, viable population size, and threats to the species.	Not Started			Contract	Work type not yet selected	Labor type not yet selected	Future funding contingent upon successful completion of first 3 years
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	3.2	Using research results from task 3.1, determine when a <i>Lirceus usdagalun</i> population may be considered viable and stable.	Not Started			Contract	Work type not yet selected	Labor type not yet selected	
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	4.1	Map drainage systems and indicate sites where pollution is entering or is likely to enter the system.	Ongoing Current	FY 1995 - FY 1999		U.S. Geological Survey, Biological Resources Division, Contract , VA Department of Environmental Quality , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	4.2	Use appropriate techniques to better delineate drainages and determine the temporal relationship between them.	Partially Complete	FY 2000 - FY 2004		Contract , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	5.1	Determine the effects of water pollution on this species.	Not Started			U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, Contract , VA Department of Environmental Quality	Work type not yet selected	Labor type not yet selected	Future funding contingent on results of initial laboratory studies
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	5.2	Locate appropriate sites for monitoring pollution.	Not Started			U.S. Geological Survey, Contract , VA Department of Environmental Quality , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	

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Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	5.3	Establish permanent monitoring stations if needed.	Planned	FY 2009	FY 2010	U.S. Geological Survey, U.S. Environmental Protection Agency, Contract , VA Department of Environmental Quality , Virginia Natural Heritage Program	Work type not yet selected	Species Expert	Costs pertain to initial establishment; ongoing maintenance needs covered by task 5.2
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	5.4	Implement regular monitoring as required to track impacts of pollution and changes in natural water levels.	Planned	FY 2009	FY 2016	U.S. Geological Survey, Biological Resources Division, U.S. Environmental Protection Agency, Contract , VA Department of Environmental Quality	Work type not yet selected	Labor type not yet selected	Future funding contingent on results of initial monitoring
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	5.5	Work with appropriate landowners, agencies, and other entities to prevent, eliminate, or minimize negative impacts to the water quality and quantity of the isopod's habitat.	Ongoing Current	FY 1995 - FY 1999		U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, VA Department of Game and Inland Fisheries , VA Department of Environmental Quality , Virginia Natural Heritage Program, Lee County	Work type not yet selected	Labor type not yet selected	+2K/yr through FY10
Lee County cave isopod (<i>Lirceus usdagalun</i>)	2	6.1	Where feasible, develop protection and restoration plans for groundwater recharge areas for all sites that historically supported or currently support the isopod.	Not Started			The Nature Conservancy, VA Department of Game and Inland Fisheries , VA Cave Board , Natural Resources Conservation Service , Virginia Natural Heritage Program, Lee County	Work type not yet selected	Labor type not yet selected	Future funding contingent on results of initial efforts

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Lee County cave isopod (Lirceus usdagalun)	1	6.2	Protect and restore Lee County cave isopod habitat, especially at sites where pollution may enter the groundwater system and at all sites known to have historically supported or which currently support this species.	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, The Nature Conservancy, VA Department of Environmental Quality, VA Cave Board, Natural Resources Conservation Service, Virginia Natural Heritage Program, Lee County	Work type not yet selected	Labor type not yet selected	Funding to continue through recovery period, as needed
Lee County cave isopod (Lirceus usdagalun)	2	6.3	Enforce existing laws and regulations to protect the Lee County cave isopod and its aquatic habitat.	Ongoing Current	FY 1995 - FY 1999		U.S. Federal Aviation Administration, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Department of Justice, Federal Bureau of Prisons, VA Department of Game and Inland Fisheries, VA Department of Environmental Quality, VA Department of Transportation, Lee County	Work type not yet selected	Labor type not yet selected	Costs associated with regular staff duties
Lee County cave isopod (Lirceus usdagalun)	3	7.1	Meet with landowners to discuss the species and its habitat needs, and to enlist their assistance in protecting Lee County cave isopod habitat.	Ongoing Current	FY 1995 - FY 1999		The Nature Conservancy, Contract, Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	Future funding as needed

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Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	7.2	Produce informational materials and conduct public education programs to: (1) improve public awareness of the Lee County cave isopod's endangered status and recovery needs, and (2) develop public appreciation of karst terrains, water quality and quantity, unique karst ecosystems and their biota, and perturbation effects.	Ongoing Current	FY 1995 - FY 1999		U.S. Environmental Protection Agency, The Nature Conservancy, Contract , VA Department of Environmental Quality , VA Cave Board , Virginia Natural Heritage Program	Work type not yet selected	Labor type not yet selected	
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	8	If feasible and as needed, restore populations of <i>Lirceus usdagalun</i> to habitat within its historical range.	Ongoing Current	FY 1995 - FY 1999		To be decided	Work type not yet selected	Labor type not yet selected	Feasibility and cost to be determined based on the results of tasks 3.1 and 3.2
Lee County cave isopod (<i>Lirceus usdagalun</i>)	3	9	Implement a program to monitor recovery progress.	Ongoing Current	FY 1995 - FY 1999			Work type not yet selected	Labor type not yet selected	Annual meetings to continue until full recovery is achieved